

Name: \_\_\_\_\_

**at1124exam: Radicals and Squares (v918)**

**Question 1**

Simplify the radical expressions.

$$\sqrt{63}$$

$$\sqrt{98}$$

$$\sqrt{45}$$

**Question 2**

Find all solutions to the equation below:

$$\frac{(x + 6)^2}{2} + 9 = 17$$

**Question 3**

By completing the square, find both solutions to the given equation. *You must show work for full credit!*

$$x^2 - 14x = -40$$

**Question 4**

Any quadratic function, with vertex at  $(h, k)$ , can be expressed in vertex form:

$$y = a(x - h)^2 + k$$

A quadratic function is shown below in standard form.

$$y = 2x^2 + 24x + 77$$

Express the function in **vertex form** and identify the **location** of the vertex.